

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY
FRANKLIN COUNTY, PENNSYLVANIA

FACILITIES PLAN
FOR
WASTE WATER PROJECT

SUPPLEMENT
TO
CHAMBERSBURG REGIONAL
WASTE WATER TREATMENT
FACILITIES PLAN

JUNE 1975

ARROWOOD, INCORPORATED
CHAMBERSBURG, PENNSYLVANIA

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PART I

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

A summary of the conclusions is as follows:

1. The construction of the facilities will improve the environment by eliminating wastewater pollution from the surface and ground waters in the area.
2. By utilizing the regional concept for the Chambersburg basin portion of the project, only one treatment plant will be used providing for maximum operating efficiency thereby reducing the chance of pollution at the point of discharge.
3. There is available capacity in the Chambersburg plant at this time to receive the discharge from this system.
4. The construction of the Cashtown portion will eliminate pollution in that area.
5. The construction of the stream crossings will have temporary environmental effects which will be quickly rectified to re-establish the environmental conditions and ecology existing prior to the construction.
6. During construction, there will be some temporary increase in noise, and dust in the vicinity of the construction sites.
7. The project utilizes the best practical waste treatment technology.

A review of the summary reveals there are only two negative environmental impacts. Both of these are temporary and the environment will recover rapidly after construction is completed.

RECOMMENDATION

Therefore, it is recommended that the alternative selected be followed to provide a wastewater project for the Hamilton Township Municipal Authority.

It is further recommended that the following schedule for implementing the construction of the project be adopted assuming that a grant offer will be made prior to January, 1976.

- | | |
|--------------------------|----------------|
| 1. Advertise for Bids | February, 1976 |
| 2. Receive Bids | April, 1976 |
| 3. Award Contracts | June, 1976 |
| 4. Begin Construction | July, 1976 |
| 5. Complete Construction | December, 1977 |
| 6. Commence Operations | January, 1978 |

PART II

A. GENERAL

The Hamilton Township Municipal Authority is a body politic established by the Hamilton Township Board of Supervisors in 1971 to construct wastewater disposal projects within the Township. The Authority came into existence during the planning and construction of Phase I sewer as covered by the Official Sewerage Plan adopted by the Township Supervisors. The Phase I and Phase II projects were originally proposed as one project. However, due to the pressure from the Department of Environmental Resources to eliminate malfunctioning septic systems in a portion of the Township, the Phase I project was completed in 1972.

The project now under discussion is Phase II which will provide sewers for the developed areas of the Township not sewered under the Phase I project.

The project consists of two parts:

1. Collection system with pumping stations and force mains transporting the wastewater to the Chambersburg Waste Water Treatment Plant for disposal.
2. Gravity collection system and treatment plant in the Cashtown area.

Exhibit 1 to this report is a map of the two systems.

B. NEED FOR THE PROJECT

This Township is one of the fastest growing areas in Franklin County. Its population averaged 1500 from 1910 to 1940. With the onset of World War II and the construction of Letterkenny Army Depot, the population increased rapidly. This brought about a vast change in the area -- from agriculture to residential -- in a few years creating a need for a wastewater collection system due to malfunctioning on-site septic systems. On January 9, 1970, the Department of Environmental

Resources Regional Sanitarian wrote that in some areas the degree of malfunctioning septic systems was 40% to 60%. The overall percentage of malfunctioning was 40% throughout the Township, (Exhibit 2). Approximately 75 percent of the residences in the service area were constructed prior to October 18, 1972.

An examination of the soils associations in the Township will explain why there are so many malfunctioning systems. All soils associations found here are classified as severe or hazardous for on-site systems.

C. ENVIRONMENTAL INVENTORY

1. Geography

The Township is located in the west central part of Franklin County. A portion of the eastern boundary abuts the western border of the Borough of Chambersburg. In general shape, it resembles an inverted I, with the inverted base extending to the west. U.S. Route 30 traverses the Township from east to west at approximately its middle.

Many improved State and Township roads interlace the area. In addition to U.S. Route 30, Interstate 81 lies about three miles to the east and is the main north-south traffic artery for the area. U.S. Route 11 is nearly parallel to Interstate 81 on the north-south axis near the Township.

The Letterkenny Army Depot is located along the northern edge of Hamilton Township.

2. Topography

The topography of most of the Township is composed of moderate to severe slopes with extensive eroded drainage courses in the upper limits of the Potomac River Basin. Some fairly level land can be found along the Back Creek Drainage Basin. The northwest portion is comprised of rather steep, well defined slopes. The elevations in the Township range from 500 feet to 1500 feet.

The Township is divided into five major drainage basins which primarily determines the location of the pipelines and structures. Other factors enter into the design; but, the topography, population density, and quantity of raw wastewater generated are the most important factors. Because of the steep topography, built up areas tend to become isolated from each other requiring longer runs of pipelines or pumping stations in order to be united in a common collector line discharging to a final point for treatment.

The gently undulating to steeply rolling topography of the area lends itself to a compatible condition of rural and suburban living. The landform configurations of hills and valleys and plains offer an extremely pleasing effect to the eye of anyone who has lived or travelled in Hamilton Township

3. Climate and Precipitation

The average temperature and total monthly precipitation is included in Table I.

WEATHER CONDITIONS
AVERAGE PRECIPITATION, TEMPERATURE
CHAMBERSBURG

<u>MONTH</u>	PRECIPITATION (inches)	mean Temperature (degrees F.)
CHAMBERSBURG (ELEVATION 640 feet)		
January	3.09	31.9
February	2.19	32.7
March	3.88	40.8
April	3.45	51.2
May	4.15	62.4
June	3.75	71.1
July	3.90	75.3
August	4.07	73.1
September	4.36	66.0
October	3.26	54.9
November	3.26	43.1
December	<u>2.97</u>	<u>33.2</u>
Annual Total	41.33	54.3 (Ave.)

Source: U. S. Weather Bureau, Climatological Data for the United States, Pennsylvania

Section

TABLE 1

4. Geology and Soils Associations

The rock formation underlying the Township are of the older geological ages -- Cambrian and Ordovician. The shale which is under the major portion of the Township including the project area is from the Ordovician period. The sedimentary rocks were formed by consolidation of clay, mud, silt, or grit and has a finely stratified or laminated structure. These rocks have been bent, broken, eroded, faulted and weathered to form the topography and soil in the project area as it is seen today. Exhibit 3 shows the geology of the Township.

The shale is made up of dark gray, light gray, to olive colored shales with some very fine grained sandstone stratae which weathers readily upon exposure. Locally, these areas have been called "slate hills".

The soil above the shale in the project area has been classified as of the Berks-Weikert Association. It was formed by the erosion and weathering of the Ordovician slate and occurs on nearly level to steep uplands. The Berks soils are moderately deep, silt loam which contains a high percentage of shales. Weikert soils are similar except they are not as deep and generally occur on steeper slopes. This soils association is not considered adequate for on-lot systems due to the very rapid percolation or shallowness.

Along the stream beds, the Philo-Pope soils association is located. This association occurs on flood plains and low terraces subject to overflow. Philo soils are deep, moderately well drained loamy soils developed in alluvium from sandstone and shale and are subject to frequent overflow. Pope soils are similar except that they are well drained and subject to occasional flooding. The Philo-Pope Association has been classified as "not suitable for subsurface disposal systems."

5. Hydrology

a. Surface Water

Approximately 79% of the Franklin County area, of which Hamilton Township is a part, is included in the Potomac River Basin. The sources of these streams are in the mountainous, wooded areas and generally flowing south to the Potomac River. The streams forming drainage basins in the Township are minor tributaries except the Conococheague Creek.

The average annual precipitation for Franklin County is approximately 40 inches. An estimated 50% of this is lost through evaporation and transpiration. Of the remaining 20 inches, less than two inches, or 10%, is available for agricultural and non-agricultural uses. Approximately 40% runs off into the streams.

There are no official gauging stations located on any of the streams in the Township. The United States Soils Conservation Service, U.S.D.A., in a report published in 1968, lists a drainage basin of 182.9 square miles for the Conococheague, and, 89.8 square miles for Back Creek in Franklin County. The United States Geological Survey reports the average flow of the Conococheague at Fairview, Maryland, is 572 cfs with a maximum flow of 32,400 cfs reported on June 23, 1972, and a minimum of 21 cfs on August 8, and September 12, 1966.

b. Ground Water

The shale formations which underlie the project area are not considered as a good source for water. Shale is a fissile rock formed by the consolidation of clay, mud or silt; small cracks or fractures provide the necessary channels for infiltration of underground water.

A well drilled in slate must penetrate deep enough to tap several cracks or fractures in order to provide sufficient quantity of water. The minerals usually associated with slate can cause the water to have a low pH.

In the project area, most of the homes are furnished water by the Bear Valley Water Authority. There are some homes which depend on "on-lot" wells.

In areas of shale formation, the soils horizons can become saturated with groundwater, and the effluent from on-lot septic systems may rise to the surface and flow into the water courses.

6. Water Quality

The water supplied to most of the homes in the area by the Bear Valley Water Authority is of a good quality. As mentioned above, the water from individual wells will be soft and apt to be polluted. There are no known records of individual well tests for bacteria.

7. Existing Facilities

a. Hamilton Township Municipal Authority

A 7555 L.F. system, known as Phase I project, was constructed by the Authority and the Township Supervisors. The system was completed in 1973 and serves that area of the Township known as the Hoke Development. The population equivalent connected to this system is 464.

The system is composed of the following:

8" asbestos cement pipe	4495 l.f.
10" asbestos cement pipe	725 l.f.
12" asbestos cement pipe	2335 l.f.
Metering Station	1

The Phase I system is connected to the Chambersburg system and the wastewater is treated at the Chambersburg plant under an agreement between the Borough and the Township. The treatment agreement is attached as Exhibit 4.

The 10 inch and 12 inch portions of this Phase I project will be used as an interceptor for the Phase II project.

An Overview Assessment of the Inflow/Infiltration of the Phase I project was prepared in January, 1975, and revised in June, 1975. It was concluded that the elimination of the inflow/infiltration is not economically feasible. A copy of the Overview Assessment is attached as Exhibit 5.

b. Existing & Proposed Chambersburg System and Treatment Plant

The discussion of the existing and proposed Chambersburg facilities is included here to demonstrate that (1) the construction of the Conococheague Interceptor by Chambersburg will be coordinated with this project, (Department of Environmental Resources Sewerage Permit No. 2873401), and, (2) capacity is available in the existing plant to treat wastewater from this project.

The two connections from Hamilton Township will be to the Conococheague Interceptor which is on the Department of Environmental Resources list of fundable projects at this time. Construction of the Hamilton Township system will be coordinated with the construction of the interceptor.

The Chambersburg plant is operating under Pennsylvania Department of Environmental Resources Permit No. 8836-5 with a capacity of 3.0

in the proposed project, the bird population will not be disturbed.

The animals usually associated with this area are foxes, raccoons, opossums, shrews, moles, squirrels, chipmunks, mice, and rabbits. Due to the proximity of the State Forests, deer often can be seen in the western portion of the Township.

The streams of the area are classed as trout streams in which trout may reproduce under natural conditions or be stocked. Other fish often caught by small boys are shiners, catfish, perches, carp, and bass. The Conococheague Creek is considered one of the major streams in this section of Pennsylvania for fishing.

There are no "wet-lands" or other environmentally sensitive areas in the project site.

9. Historical and Archaeological Sites

Within Hamilton Township there is only one registered historical site. Fort McCord, which was the site of a stockade burned by the Indians in 1756, is registered by the Commonwealth of Pennsylvania as a historical site. Fort McCord is not located within the project area.

The Franklin County Planning Commission has a list of 18 schools located within the Township which are potential historical sites. None of these will be disturbed by this project. These schools are as follows:

Bossart School	Originally log school - Rebuilt with brick in 1839.
School Center	Built in 1837
Webster Academy	Closed 1870
Red School - Cashtown	Original log - Rebuilt c. 1875
Pleasant Hill School (old)	c. 1844

Pleasant Hill School (New)	1882 - Razed 1914.
Pine Grove School	1872
Freemont School	Closed 1867
Washington School	1867
Mt. Jackson School	1860
Fairground School	1868
Centennial School	Closed 1924
New Webster School	1870
McClellandsville Negro School	1891
Franklin School	1894
Portico School	1857 - In use - Enlarged to six rooms
South Hamilton School	1924 - Four rooms enlarged to six rooms In use
Hamilton Heights School	1964 - in use

These are the only historical and archaeological sites recorded in the Township.

10. Wetlands, Parks, Etc.

There are no wetlands within the Township. A State Forest is located in the extreme western part of the Township in the mountains. The proposed project area will not extend into the State Forest.

11. Land Use

Due to the restrictive building regulations in the Borough of Chambersburg and the proximity of Letterkenny Army Depot, it is expected that the Township will continue to grow at a rate in excess of the national growth rate. The Hamilton Township Planning Commission has established zoning and subdivision Ordinances under which the land use can be regulated.

12. Population Projections

This Township is unique with reference to population growth. Its location near the Borough of Chambersburg and Letterkenny Army Depot are the two predominant factors causing the phenomenal growth of the area. The increase began in the decade 1940-1950 as illustrated in Table II.

TABLE II
POPULATION GROWTH

<u>YEAR</u>	<u>POPULATION</u>	<u>% GROWTH</u>
1940	1,560	---
1950	1,978	26.8%
1960	3,077	55.6%
1970	4,921	59.9%

The Borough of Chambersburg in 1955 enacted a stringent subdivision ordinance which has caused development of the surrounding Townships. Additionally, the growth of commercial and industrial businesses in and around the Borough has created a need for housing. The Letterkenny Army Depot is another major employment center. Approximately 75% of the residences in the service area were built prior to October 18, 1972.

The design population of 8,448 in the year 2010 was used by the designing engineer. This was on the assumption the population would increase to 12,500 in 2010 and only 67.5% would need sewers.

A review of the population increases shown in Table II indicates an average increase of 53.8% per decade over the past three decades. The question of whether the population will continue to grow at this rate is of prime importance to the designer. The design population projections are shown in Exhibit 6.

Throughout Hamilton Township there is a series of built-up areas which will be sewered by the proposed project. These areas are located mainly along the road frontages. There is provided a growth allowance for approximately 1,300 persons (377 E.D.U.'s) in excess of the normally expected increases. This allowance is to provide for both Hamilton and Letterkenny Townships with approximately 10% growth expected in Letterkenny and 90% in Hamilton. The Letterkenny Township system, when it is built, will connect to the Phase II Hamilton Township project for transporting the wastewater to the Chambersburg Regional Treatment Plant.

PART III

ALTERNATIVES & COST EFFECTIVENESS

A. ALTERNATIVES

The development of this proposed project involved the consideration of the following alternatives and their effect on the environment:

1. Continue the use of on-lot septic disposal systems and not construct the proposed facilities.
2. Construction of two separate collection systems and treatment plants -- one for the Chambersburg area and one for the Cashtown area.
3. Design one collection system and transport the waste water to the Chambersburg Borough Treatment Plant and a collection system and treatment plant for the Cashtown area.

The acceptance of Alternative No. 1 would mean that the Authority and Township Supervisors would condone the conditions as they now exist in the project service area. According to Exhibit No. 2, 40% of the homes in the Township have malfunctioning sewage systems. With this percentage of malfunctioning systems, there is a significant potential for a public health hazard and degradation of the environment if development is permitted to continue with "on-lot" systems.

Should the most adverse condition develop under a "do-nothing" program it is possible that land developers could build privately owned and operated waste systems for their developments. While municipalities are dependent on substantial government aid and often must conform to regionalization of facilities to receive grants, private organizations which meet the legal requirements for discharge to streams are entitled to sewage permits. This could lead to a multiplicity of small waste water treatment plants scattered throughout the area operated by different organizations and often without adequate supervision. It is conceivable that the discharge from these small

plants could cause eutrophication of the receiving streams. This alternative was rejected due to its adverse effect on the environment.

The use of Alternative No. 2, the construction of two separate collection systems and treatment plants for each of the two areas, will require a greater irreversible and irretrievable commitment of materials in construction and land. This Alternative is not economically feasible. The terrain in the Chambersburg basin area is such that the location of a plant proposed under this alternative would of necessity be within two miles downstream from the existing Chambersburg Borough Treatment Plant. In this short distance, there would be insufficient time for the stream to recover from the pollution discharged by the Chambersburg Borough Treatment Plant before it received another polluted discharge. This would be an undesirable effect on the environment.

The use of Alternative No. 3 was considered next. Under this alternative, the waste water from the area contiguous to the Borough of Chambersburg will be collected and transported to the Chambersburg Borough Plant for treatment. The Cashtown area will be provided with a collection system and treatment plant due to its remoteness from the remainder of the project.

B. FEASIBLE ALTERNATIVE

The decision to provide a separate system and treatment plant for the Cashtown area was predicated on the impracticality and financial infeasibility of pumping the small quantity of wastewater to the Chambersburg Borough Plant. This area is approximately six miles on a direct line from the Chambersburg Borough Plant. The cost of building a force main and pumping stations when combined with the fact the wastewater would be confined in the force main for several hours were the determining factors for not using a pumping station as a practical solution until sometime in the future (2010 or 2020) when there

will be additional expansion of combination gravity-force main systems to interlace the intervening area.

This alternative was selected as the most cost effective with the least effect on the environment for the following reasons:

1. The regional concept for wastewater management would be utilized.
2. More economically feasible.
3. The least effect on the environment. The only environmental effect will be some noise, dust, and temporary displacement of the ecology along the streams at crossings during construction.
4. There will be a single point of discharge into the Conococheague Creek from the Chambersburg area from a plant designed with the best practical waste technology. The discharge from the Cashtown plant will be into an unnamed tributary of Back Creek.

C. COST EFFECTIVE ANALYSIS

As Alternative No. 1, the "do nothing" alternative, has been rejected, the cost effective analysis will consider Alternatives No. 2 and 3. Table III contains the comparisons of the present worths and the average annual equivalent costs for these two alternatives. A review of the comparisons will reveal that the designer has utilized the most economical alternative in designing the project.

D. SELECTED ALTERNATIVE

The alternative to construct a regional collection system in the Chambersburg area and a collection system and treatment plant in the Cashtown area was selected for two reasons. The first is that this plan will be more economical of the two plans considered. The second reason is that this plan would have fewer environmental effects. The construction of the system will have numerous temporary impacts principally at stream crossings. There will be temporary

TABLE III
ALTERNATIVES NOS. 2 & 3
PRESENT WORTH
AND
AVERAGE ANNUAL EQUIVALENT COST
COMPARISONS

ITEM	ALTERNATIVE NO. 2			ALTERNATIVE NO. 3		
	C'BURG BASIN	CASHTOWN BASIN	TOTAL	C'BURG BASIN	CASHTOWN BASIN	TOTAL
<u>Initial Cost</u>						
1. Project	\$7,434,000	\$608,000	\$8,042,000	\$3,962,000	\$608,000	\$4,570,000
2. Capital						
3. Contribution				\$ 355,400		\$ 355,400
<u>Present Worth</u>						
Annual O & M	\$1,324,250	\$371,000	\$1,695,250	\$ 529,700	\$371,000	\$ 900,700
Treat. Fee	---	---	---	\$ 375,000	---	\$ 375,000
<u>TOTAL PW</u>	\$8,758,250	\$979,000	\$9,737,250	\$5,222,100	\$979,000	\$6,201,100
<u>AVERAGE ANNUAL EQUIVALENT COST</u>	\$826,690	\$ 92,410	\$ 919,100	\$ 492,900	\$ 92,410	\$ 585,320

disturbance of the stream bed and its aquatic life and the animal population along the banks. This type of impact is of short duration and the ecology will recover rapidly. Other short term effects will be noise, dust, and traffic re-routing.

The construction of stream crossings and any site work will be in accordance with "Title 25, Rules and Regulations, Part I, Department of Environmental Resources, Subpart C, Protection of Natural Resources, Article II, Water Resources, Chapter 102, Erosion Control". Temporary and permanent soils erosion and sediment control measures are written into the Contract Documents. Contractors will be required to follow these measures and each construction procedure used to control erosion and sedimentation shall be submitted for approval.

The possible long term effect on the environment is the possible effect on land use and increased land development. This Township has a Planning Commission which can control the amount and direction of growth.

There is no doubt that the construction of this project will have a long range impact on the environment by the elimination of the water pollution and the elimination of public health hazards.

E. COMMITMENT OF RESOURCES

The irreversible or irretrievable commitment of resources in connection with this project involves the materials used in its construction, and the land required for pumping station, sites, treatment plant site and the permanent easements. The construction program will require pipe, concrete, steel, and lumber with an irreversible commitment of labor, machinery, and energy.

PART IV

PUBLIC PARTICIPATION

A. GENERAL

This project is a result of the pressure of the Department of Environmental Resources on the citizens within the Township to eliminate malfunctioning on-lot septic systems. Due to this pressure and the unsatisfactory soils condition, the residents see the construction of this system as the answer to their needs.

The only objection expressed has been the monthly rate to be charged per house. No objection has been expressed to the construction of the system for any other reason.

All meetings of the Board of Township Supervisors and the Hamilton Township Municipal Authority are open to the public. Two public meetings have been held and one was reported in the local newspaper, "The Public Opinion" on December 8, 1971. There was another article in the same paper on November 3, 1971, outlining the scope of the project. Minutes of the Hamilton Township Board of Supervisors meeting on December 7, 1971, mention that the main item of objection of those attending the public meeting was the monthly sewer charge. The newspaper articles and the minutes are included as Exhibit 7.

The second meeting was held on October 5, 1972.

The minutes of the joint meeting of the Board of Supervisors and the Hamilton Township Municipal Authority on October 5, 1972, are Exhibit 8. At this meeting, the Phase I and II projects were the subject of a public meeting held in the Hamilton Heights School. The newspaper article notifying the public of this meeting was published on October 3, 1972, and is a part of Exhibit 8.

From the above and the Exhibits, it is readily apparent that there was open public discussion regarding the project.

LIST OF EXHIBITS

Exhibit 1 - Plan of System

Exhibit 2 - Letter dated January 9, 1970, from Joseph P. Galant to William L. Arrowood, Arrowood, Incorporated, concerning malfunctioning sewage disposal system, Hamilton Township, Franklin County, Pennsylvania.

Exhibit 3 - Geology, Hamilton Township, Franklin County, Pennsylvania.

Exhibit 4 - Treatment Agreement between the Borough of Chambersburg and Hamilton Township.

Exhibit 5 - Overview Assessment of Inflow/Infiltration

Exhibit 6 - Population Projection, Hamilton Township, Franklin County, Pennsylvania

Exhibit 7 - Special Meeting of the Hamilton Township Board of Supervisors (Minutes) Held December 7, 197.

Exhibit 8 - Minutes of Special Public Meeting - October 5, 1972.

State Health Center
P. O. Box 464
Chambersburg, Pa. 17201
January 9, 1970

SUBJECT Malfunctioning Sewage Disposal Systems
Hamilton Township
Franklin County

TO William Arrowood, Engineer
520 East Liberty Street
Chambersburg, Penna.

FROM Joseph P. Galant *JPG*
Sanitarian II

Records at the State Health Center in Chambersburg indicate the following areas in Hamilton Township, Franklin County, to have malfunctioning sewage disposal systems:

Hoke Development, Warm Spring Road (Marvern Drive East and West) Hamilton Heights, Edenville Road and Cashtown the degree of malfunctioning is 40% to 60%. This includes sewage effluent discharging to the surface of the ground, roadways, wells, ponds, and streams. Included in the above percentages would be sewage being discharged to our underground water supplies as indicated by a high percentage of unsatisfactory water samples.

The malfunctioning is greater during the early spring months with the additional surface waters from rains and melting snows and also from the fluctuating seasonal high water table. The overall picture of malfunctioning sewage systems in the entire township represents approximately 40% of total homes.

If you have further questions concerning the above, please feel free to contact this office.

JPG/ms

Exhibit 2

THIS AGREEMENT

MADE this 17th day of August, 1970, by and between The Mayor and Town Council of the Borough of Chambersburg, a municipal corporation in Franklin County, Pennsylvania, hereinafter called first party, AND Township of Hamilton, a municipal corporation in Franklin County, Pennsylvania, hereinafter called second party.

WHEREAS, first party operates a sanitary sewer system and treatment plant within the Borough limits of the Borough of Chambersburg under and subject to a lease from The Municipal Authority of the Borough of Chambersburg and a Trust Indenture from the said Authority to The National Bank of Chambersburg, now Valley Bank and Trust Company; and

WHEREAS, second party at present does not own or operate any sanitary sewer facilities but desires to enter into an agreement with first party to connect with the sanitary sewer system of first party so as to render sanitary sewer service within portions of Hamilton Township and a small portion of Letterkenny Township bounded by Letterkenny Army Depot, Greene Township and Hamilton Township, under terms and conditions as herein set forth.

WITNESSETH, IT IS MUTUALLY AGREED by and between the parties hereto as follows:

1. First party will permit second party to connect with its sewage collection system at the following locations:

(a) The existing 24" trunk line at a location just south of the Conococheague Creek and generally to the rear of Carson's Motel.

(b) At a point generally in the location of the intersection of Commerce Street and Wolf Avenue.

(c) At a point generally at the intersection of Harrison and Grandview Avenues.

2. The connections by second party of its contemplated sewer facilities to the sewer facilities of first party shall be entirely at the expense of second party and shall be at the locations and under such conditions as may be determined by first party. Second party shall, in accordance with specifications approved by first party, construct a metering and sampling station at each point of delivery of sewage to first party's main or at mutually acceptable locations.

3. Second party may, at such time as shall to it seem convenient, install at its own expense, a complete system of sanitary sewers including, but not limited to, collection, trunk and interception sewers; pumping facilities and pressure sewers, all of which may discharge through the connections herein provided.

4. Second party will enact and enforce regulations and restrictions for the use of its sewer facilities of the same kind enacted and enforced from time to time by first party, and second party shall not permit any industrial waste or wastes other than domestic sewage to be introduced by any user into its sewer system without first having had and obtained the written consent of the first party, which consent shall not be unreasonably withheld

and if in the opinion of second party such consent is being unreasonably withheld, upon request of second party the matter shall be submitted to arbitration in the same manner as provided herein. Failure to comply with the provisions of this paragraph, after notice, shall give first party the right to disconnect second party's connection to first party's sewer facilities and to declare this agreement null and void.

5. Either party may assign its rights hereunder to a Pennsylvania Municipal Authority or other municipal entity for the purpose of financing or operation but may not otherwise assign such rights without the express consent in writing of the other, and in the event of assignment, the assigning party shall continue to be bound by the obligations hereunder.

6. In the event of a general breakdown of the jointly used trunk sewer mains or the treatment plant of first party so as to force the temporary cessation of the sewer service contemplated hereunder, first party shall not be liable to second party or its users for any damage sustained while such facilities are out of service, and second party shall indemnify and hold first party harmless from any claims of its users in such event.

7. After connection by second party to the sewer system of first party, second party shall pay to first party for accepting and treating the sewage introduced by second party as follows:

(a) A quarterly charge based upon the volume of sewage delivered by second party, which charge per thousand gallons shall be the equivalent of the cost to first party per thousand gallons for the operation and maintenance of its treatment plant in the previous quarter, including depreciation, plus all clerical costs incurred in ascertaining such costs and in rendering a bill, plus 10% for overhead, provided, that first party shall, at the time of the execution of this agreement, submit in writing to second party a schedule of items included as overhead rather than items of operation and maintenance and in the event any of said items are included as operating or maintenance expenses in the future, the amounts so included shall be deducted from the 10% overhead charge and if such items amount to 10% or more then the overhead charge shall be eliminated during any such quarter; and

(b) A quarterly strength surcharge based on deviations over and above the strength considered normal for domestic sewage of 200 milligrams per liter of biological oxygen demand and 200 milligrams per liter of suspended solids. The surcharge will consist of a multiplier factor on the volume delivered obtained from the following formula:

$$\text{Adjustment factor} = 1.00 + \frac{(\text{B.O.D. of Waste} - 200)}{1000} + \frac{(\text{Suspended Solids of Waste} - 200)}{1000}$$

Any member of the formula giving a negative value shall be disregarded.

(c) A quarterly charge based on the cost of operation and maintenance of the joint trunk sewers and interceptors in the same proportion as that shown in the distribution of capital costs for each portion of the joint sewer plus clerical costs incurred in ascertaining such a bill; and

(d) The charges provided in this paragraph shall be subject to audit by second party upon request. First party shall have the sole right to decide the accounting method used in determining costs, but specific items of

cost and expense shall be subject to audit. A request for an audit shall not relieve second party from payment of charges when due, but any adjustment in favor of second party shall be credited to future bills. Any request for audit shall be made by second party within thirty (30) days after receiving any bill and if no such request is made the bill shall be considered correct and not subject to future questions; and

(e) All charges under this paragraph shall be due and payable within thirty (30) days after the mailing of first party's bill to second party and if not paid within such time shall be subject to a penalty of 2% of the amount of the bill plus interest at 6% per annum from the due date until paid.

8. In the event grants become available for the construction of any of the mains or improvements to the treatment plant provided in this agreement, then each party shall be entitled to share in the benefits of any such grant or grants in the proportion set forth in the supplemental agreement hereinafter provided.

9. In the event second party shall fail to pay the charges referred to and set forth in paragraph 7 hereof within thirty (30) days after the same become due, first party may, at its option, disconnect second party's connection to first party's sewer facilities, or may bill and collect directly from second party's sewer users the entire amount of the charges established by second party for the use of second party's sewer facilities until any amount due is paid in full, and in the event the established sewer charges are insufficient for this purpose, second party agrees to increase the sewer charges to an amount necessary to pay first party's charges. In event of default as provided in this paragraph, second party does irrevocably authorize first party to collect such sewer charges and upon payment by second party's users they are relieved from further payment to second party.

10. In the event it becomes necessary to reconstruct, replace or relocate all or any part of the trunk sewer mains used jointly by first party and second party, or to reconstruct, replace or relocate all or any part of the treatment plant of first party because of any damage thereto resulting from any cause whatsoever, and irrespective of any negligence on the part of first party, or for any other reason beyond the voluntary control of first party, then the cost of such reconstruction, replacement or relocation shall be prorated and paid in accordance with the supplemental agreement hereinafter referred to, after crediting to such cost any amounts received by either party under insurance policies or from any third party legally liable for any such damage or any contribution by any third party toward the cost thereof.

11. Any financing of improvements to the sewer facilities of either first party or second party shall in all cases be subject to the rights and obligations of the parties under this agreement.

12. Wherever in this agreement arbitration is provided for, the procedure for the appointment of arbitrators, the number of arbitrators and the qualification of arbitrators shall be as provided in the supplemental agreement hereinafter referred to in paragraph 2 (a).

13. The payment of Hamilton for its share of future capital costs of construction, reconstruction or replacement of capital facilities of Borough's sanitary sewer system, including sewer mains and the sewer treatment plant and facilities, shall be computed and made in accordance with a supplemental agreement to be executed simultaneously with the execution of this agreement, said agreement being between Borough, Hamilton and Guilford Township.

7. Any party may transfer to any other party any part of its reserve capacity in the mains or treatment plant under such terms and conditions as such parties may agree, except, that, the party transferring the reserve capacity shall continue to be liable under the terms of this agreement in case of default on the part of the party to which any such reserve capacity is transferred.

IN WITNESS WHEREOF, Borough has caused this agreement to be executed in its behalf in its corporate name by the hand of its President of Town Council, and its corporate seal affixed, attested by its Secretary, all the day and year first above written, all pursuant to authorization of the Town Council of the Borough of Chambersburg adopted at a meeting regularly called on the 10th day of August, 1970, as appears in the minutes of that meeting, and Guilford has caused this agreement to be executed in its behalf in its corporate name by the hand of its Chairman of the Board of Supervisors, and its corporate seal affixed, attested by its Secretary, all the day and year first above written, all pursuant to a Resolution of the Board of Supervisors adopted at a meeting regularly called on the 21st day of August, 1970, as appears in the minutes of that meeting, and Hamilton has caused this agreement to be executed in its behalf in its corporate name by the hand of its Chairman of the Board of Supervisors, and its corporate seal affixed, attested by its Secretary, all the day and year first above written, all pursuant to a Resolution of the Board of Supervisors adopted at a meeting regularly called on the 1st day of September, 1970, as appears in the minutes of that meeting.

Attest:

W. E. Jacob
Secretary of Town Council

THE MAYOR AND TOWN COUNCIL OF THE
BOROUGH OF CHAMBERSBURG

By *James B. Jacob*
President of Town Council

Attest:

W. E. Jacob
Secretary

TOWNSHIP OF GUILFORD

By *S. Leroy Carr*
Chairman of the Board of Supervisors

Attest:

Carlene Allison
Secretary

TOWNSHIP OF HAMILTON

By *Carl Shields*
Chairman of the Board of Supervisors

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY

FRANKLIN COUNTY, PENNSYLVANIA

OVERVIEW ASSESSMENT

OF

INFLOW/INFILTRATION

FEBRUARY, 1975

REVISED
JUNE, 1975

ARROWOOD, INCORPORATED

CONSULTING ENGINEERS

CHAMBERSBURG, PENNSYLVANIA

Exhibit 5
(18 pages)

PREFACE

This overview assessment of the inflow/infiltration problem in connection with the Hamilton Township wastewater system, Phase I, was originally prepared in February, 1975. This revision was prepared in June, 1975, at the request of the Pennsylvania Department of Environmental Resources.

Included herein are the latest flow recordings and weather data as requested by the Department of Environmental Resources. Also included is additional data on water meter readings, population connected, and the quantity of wastewater from holding tanks dumped into the system. When the original report was prepared in February most of the additional data was not available.

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY

FRANKLIN COUNTY, PENNSYLVANIA

OVERVIEW ASSESSMENT

OF

INFLOW/INFILTRATION

PURPOSE: This report shall present an overview assessment of the wastewater flows in the existing Hamilton Township sewer system to ascertain whether there is any problem with inflow/infiltration and its probable impact on the economics of the system.

SOURCES OF INFLOW/INFILTRATION: In the preparation of this report, sources of the inflow/infiltration must be determined and corrective measures recommended. These sources are as follows:

A. Inflow

1. Rain water from downspouts or leakage through submerged manholes.
2. Sump pumps.
3. Condensate drains or drainage from industrial processes.
4. Other sources.

B. Infiltration

1. Seepage of ground water through broken joints and pipe, bad lateral connections, and faulty manholes.

Inflow into the system becomes readily apparent as the recording meter will reflect the additional water almost immediately. The inflow of rainwater from downspouts cause the meter to record the additional flow on the same day as the rain occurred. Infiltration will reflect an increase on the chart two to three days after the increase in the ground water.

DESCRIPTION OF SYSTEM

LENGTH AND SIZE OF LINES - The system is composed of the following:

8" asbestos cement pipe	4495 L.F.
10" asbestos cement pipe	725 L.F.
12" asbestos cement pipe	2335 L.F.
Metering Station	1

This is a very short collection system with a total of 4495 lineal feet of collection lines and 3060 lineal feet of interceptor line, completed in 1973. This system was constructed under Phase I of the Official Plan to provide sewers for the built-up areas of Hamilton Township. The interceptor and the metering station were designed to become a part of the overall system, which will be completed under the Phase II construction project now on the Department of Environmental Resources list of fundable projects. Wastewater from the Phase I and Phase II projects will be transported to the Chambersburg plant for treatment.

POPULATION SERVED - At the present, 56 domestic, two (2) commercial (automotive sales and service) and one (1) church with a day school are connected to the system.

The total population connected is as follows:

66 domestic x 3.5 capita (Est.)	230
2 commercial (actual)	49
1 church with school (students; actual)	<u>165</u>
Total capita	444

For the past nine months, septic tank cleaners have been discharging an average of 30500 GPM of wastewater from holding tanks into the system. This discharge of holding tank wastewater is increasing. The discharge is equivalent to a population of 16 based on 60 GPCD. The total population and population equivalent is 464.

The church and church school are in use seven days a week and several nights during the week. Here, the average daily water consumption will be used.

LOCATION AND SITE INFORMATION - The system is located adjacent to the Borough of Chambersburg in rolling hills. In some areas, rock formations are within two (2) feet of the surface. In the low areas, the soil cover is approximately six (6) to eight (8) feet deep.

A very high water table exists due to the proximity of the rock to the surface. In wet weather the water table is one (1) foot below the surface. As a result, many of the residences have wet basements.

FLOW METER READINGS - The flow meter readings are attached as Exhibit I. The meter reading for the first four (4) months appear to be high. The metering gear was checked by a factory representative in the latter part of May, 1974, and found to be malfunctioning. Since that time, the meter will record accurately provided the metering well is cleaned daily. Since February 17, 1975, this Consultant has been checking the flows recorded and the condition of the metering pit. The results of these weekly inspections are shown in Exhibit I. It was found that the meter was not recording properly 44 percent of the time. This fact can cause a significant variance in the readings and the actual flows.

Included are meter readings from January 1, 1974, through April 30, 1975 in Exhibit II. The meter readings for the first four months of 1975 are substantially lower than the readings for the first four months of 1974.

PRECIPITATION - The total monthly rainfall for 1974 and the first four months of 1975 is included as Exhibit III. A graph showing the precipitation curve together with the monthly metered flows are Exhibit IV for 1974 and Exhibit V for 1975.

WATER METER READINGS - Less than 25% of the residences are connected to the local water system. However, the three largest generators of wastewater are connected to metered water. The metered flows are as follows:

	<u>1974</u>	<u>4 MONTHS -</u> <u>1975</u>
Church with school	210,900 Gals.	104,200 Gals.*
One commerical w/28 employees		
No. 1 meter	49,650	46,200
No. 2 meter	59,400	15,150
No. 3 meter	66,610	12,780*
One commercial w/21 employees	<u>123,450</u>	<u>49,650</u>
TOTAL	510,010	227,890

*For period ending 3/15/75. All others, for period ending April 30, 1975

OTHER CONTRIBUTORS OF WASTEWATER - Under a Township Holding Tank Ordinance, septic tank cleaners are allowed to dump wastewater collected from holding tanks into the system for a fee. This has been averaging 30,500 GPM. A partial record of the volume dumped is as follows:

August, 1974	29,500 gallons
September	22,000
October	30,000
November	31,000
December	29,000
TOTAL (five months)	141,500 gallons
January, 1975	39,500
February	31,000
March	31,000
April	32,000
TOTAL (four months)	133,500 gallons

TREATMENT COSTS - Attached is Exhibit VI showing the flows and the amounts paid for treating the wastewater. From this information, the average cost in 1974 of \$0.225 per 1000 gallons has been developed.

1. CALCULATED FLOWS : (Daily Average)

Residential

66 units x 3.5 capita x 60 GPCD 13,860

Commercial

1. Commercial w/28 employees 480

2. Commercial w/21 employees 340

Church & School 340

Holding Tank Wastewater 1,110

TOTAL DAILY AVERAGE 16,130

say 16,000 GPD

2. ALLOWABLE INFILTRATION

NOTE: The specifications permitted an infiltration of 300 G/D/Inch diameter/mile.

8" line - 8" x 300 GPD x $\frac{4495}{5280}$ = 2,040 GPD

10" line - 10" x 300 GPD x $\frac{725}{5280}$ = 420 GPD

12" line - 12" x 300 GPD x $\frac{2335}{5280}$ = 1,580 GPD

TOTAL ALLOWABLE INFILTRATION 4,040 GPD

3. TOTAL PERMISSIBLE FLOWS (Calculated plus Allowable Infiltration)

	Daily	<u>GALLONS</u> <u>Monthly</u>	<u>Annually</u>
Calculated Flow	16,000	480,000	5,840,000
Allowable I/I	<u>4,040</u>	<u>121,200</u>	<u>1,474,600</u>
TOTALS	20,000	601,200	7,314,600

4. RECORDED FLOWS (See Exhibit II)

NOTE: Due to malfunctioning meter during first five months of 1974, the annual flows have been calculated by extrapolation.

Total Annual Flow (6/1/74 - 5/31/75)	8.113 MGY
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Less: Total Permissible Flow	(7.315) MGY
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Less: For meter not recording properly (.405) (5% x 8.113 MGY = 0.405 MGY)	
--	--

<u>NET TOTAL INFILTRATION</u>	0.375 MGY
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5. COST EFFECTIVENESS TO ELIMINATE I/I

A. 1974 cost to treat I/I

375 x \$0.225	=	\$ 84.38
---------------	---	----------

B. 10 year present worth at 7%

\$84.38 x 7.0236	=	\$593.00
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C. 20 year present worth at 7%

\$84.38 x 10.5940	=	\$894.00
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6. ESTIMATED COST TO ELIMINATE I/I (See Exhibit VII)

TV inspection and grouting lines	\$12,000
----------------------------------	----------

7. COST OF ELIMINATION vs. 20 YEAR PRESENT WORTH

Cost to eliminate	\$12,000
-------------------	----------

Less: 20 year P/W	<u>(\$894)</u>
-------------------	----------------

\$11,106

DISCUSSION:

1. The metering is not operating properly due to the periodic low flows allowing solids to accumulate under the float.
2. This condition will be obviated when the Phase II project is "on line" providing additional volume and speed to the wastewater which will scour the pit clean.
3. From Exhibit V, it is apparent there is some inflow. The magnitude of the volume of inflow is difficult to ascertain. During the month of January, there was a total of 3.63 inches of rainfall and the greatest flow recorded was 33,000 GPD. On February 23, 0.62 inches and on February 24, 0.87 inches of precipitation were recorded. The flow meter on February 23 indicated a flow of 47,000 GPD, and on February 24, a flow of 82,000 GPD was recorded. Compare these readings to the readings on March 19 when 1.27 inches of rainfall and the flow meter recorded 58,000 GPD. Further comparison should be made with the rain on April 24 and 25 when 0.92 inches and 1.88 inches were recorded. The flow recorded on April 24 was 20,000 GPD and on April 25 was 49,000 GPD. Exhibit V indicates there is some inflow as the meter records these increases on the day they occur. The comparisons pointed out above indicate there is some disparity in the amount of inflow and the recorded flow.

CONCLUSIONS:

1. It is evident that an I/I problem exists. However, the magnitude of the problem cannot be definitely determined now due to the erroneous recording by the flow meter when solids accumulate under the float.
2. The Township officials will act to eliminate any illegal connections which should eliminate the problem.
3. The cost effective analysis shows that it is not economically feasible to commence a program to televise the lines.
4. There may be some sump pumps and downspouts connected to the system. This I/I study has pointed out to the Township officials that a problem with illegal connections may exist. As a result, the Township Supervisors on March 4, 1975, sent a letter to all sewer users of the Phase I project requesting disconnection of any illegal drainage. (EXHIBIT VIII) The reduction in the inflow which can be noted for the months of March and April may have resulted from this letter. Within the next three weeks, an inspection of all residences and other users will be made to determine whether any illegal connections exists.

RECOMMENDATIONS:

In view of the foregoing, it is recommended that:


1. No funds be expended to televise the lines as this is not economically feasible.
2. The inspection of the users' premises for illegal connections be completed and to have them disconnected.

Bowman Stevens, P.E.

May 29, 1975

MEMORANDUM

TO: BOWMAN STEVENS
FROM: ROBERT E. WORLEY



SUBJECT: Hamilton Township Municipal Authority Meter Reading

Since February 17, 1975, I have checked the meter recording of the flow of the subject system. The findings are as follows:

- February 17 - Meter recording 25 gpm - actual measurement indicated a flow of 15 gpm. There was paper under the transmitter float preventing it from seeking the level of the water.
- February 24 - Flow on chart fluctuating from 20 to 70 gpm. This agrees with measurement at flumes.
- March 4 - Flow on chart 25 gpm. Flow by measurement 20 gpm.
- March 11 - Flow on chart 20 gpm. Flow by measurement 10 gpm.
- March 17 - Flow of 20 gpm. Chart and measurement agree.
- March 20 - Broken pen on chart - 30 gpm recorded after repairing pen.
- March 24 - Chart and measurement agree at 20 gpm.
- April 3 - Chart and measurement agree at 15 gpm.
- April 11 - Flow on meter 15 gpm. Flow by measurement 10 gpm.
- April 15 - 15 gpm recorded and measured.
- April 22 - 6 gpm recorded and measured.
- May 2 - 20 gpm recorded and measured.
- May 6 - 15 gpm recorded and measured.
- May 15 - 15 gpm recorded, 10 gpm measured. Solids under transmitter float.
- May 21 - 20 gpm recorded, 10 gpm measured. Solids under transmitter float.
- May 29 - 25 gpm recorded, 8 gpm measured. Solids under transmitter float.

During the past 16 weeks, we have found that the chart was not recording properly seven times, or 44% of the time. The malfunctioning of the meter usually occurs during low flows as there is not sufficient water to scour the metering pit and wash the solids down stream. This condition will be corrected when the Phase II project is built and on line providing greater flows.

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY
FRANKLIN COUNTY, PENNSYLVANIA

EXHIBIT II

RECORDED FLOWS

(GALLONS)

	<u>1974</u>	<u>1975</u>
January	1,009,000	742,000
February	1,071,000	987,000
March	1,665,000	797,000
April	1,309,000	659,000
May	1,249,000	750,000 *
June	779,000	
July	622,000	
August	536,000	
September	664,000	
October	573,000	
November	432,000	
December	<u>572,000</u>	
TOTAL ANNUAL FLOW	10,481,000	

Source: Township Records

* Extrapolated

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY

FRANKLIN COUNTY, PENNSYLVANIA

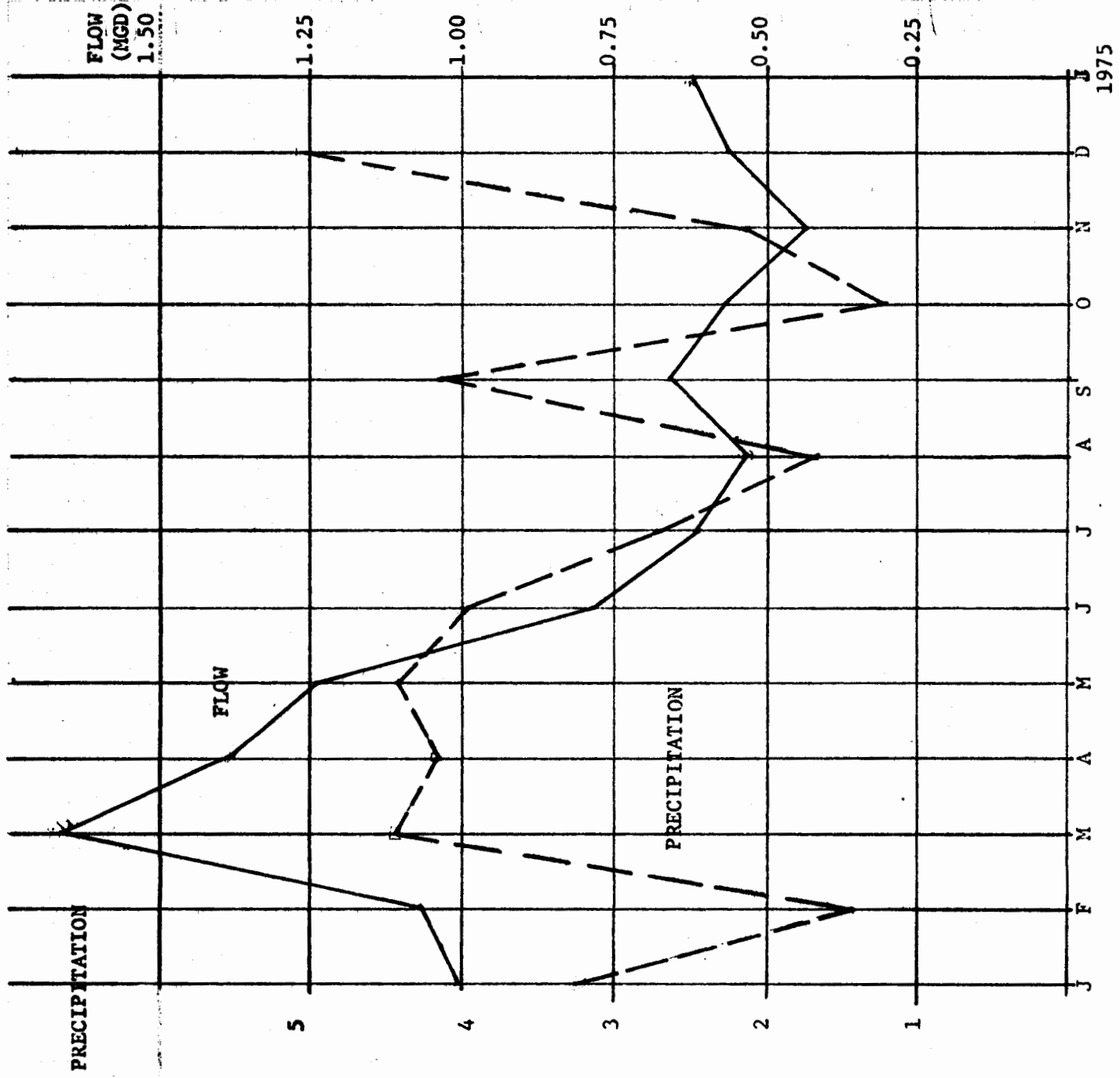
EXHIBIT III

PRECIPITATION DATA
1974

<u>Month</u>	<u>Total Precipitation (inches)</u>	<u>Average Temperature (degrees)</u>
January	3.28	29.7
February	1.44	31.4
March	4.43	40.0
April	4.19	51.4
May	4.41	62.0
June	3.96	70.3
July	2.71	74.9
August	1.67	73.0
September	4.18	66.0
October	1.23	54.7
November	2.13	43.0
December	<u>5.06</u>	<u>33.0</u>
TOTAL	38.69	

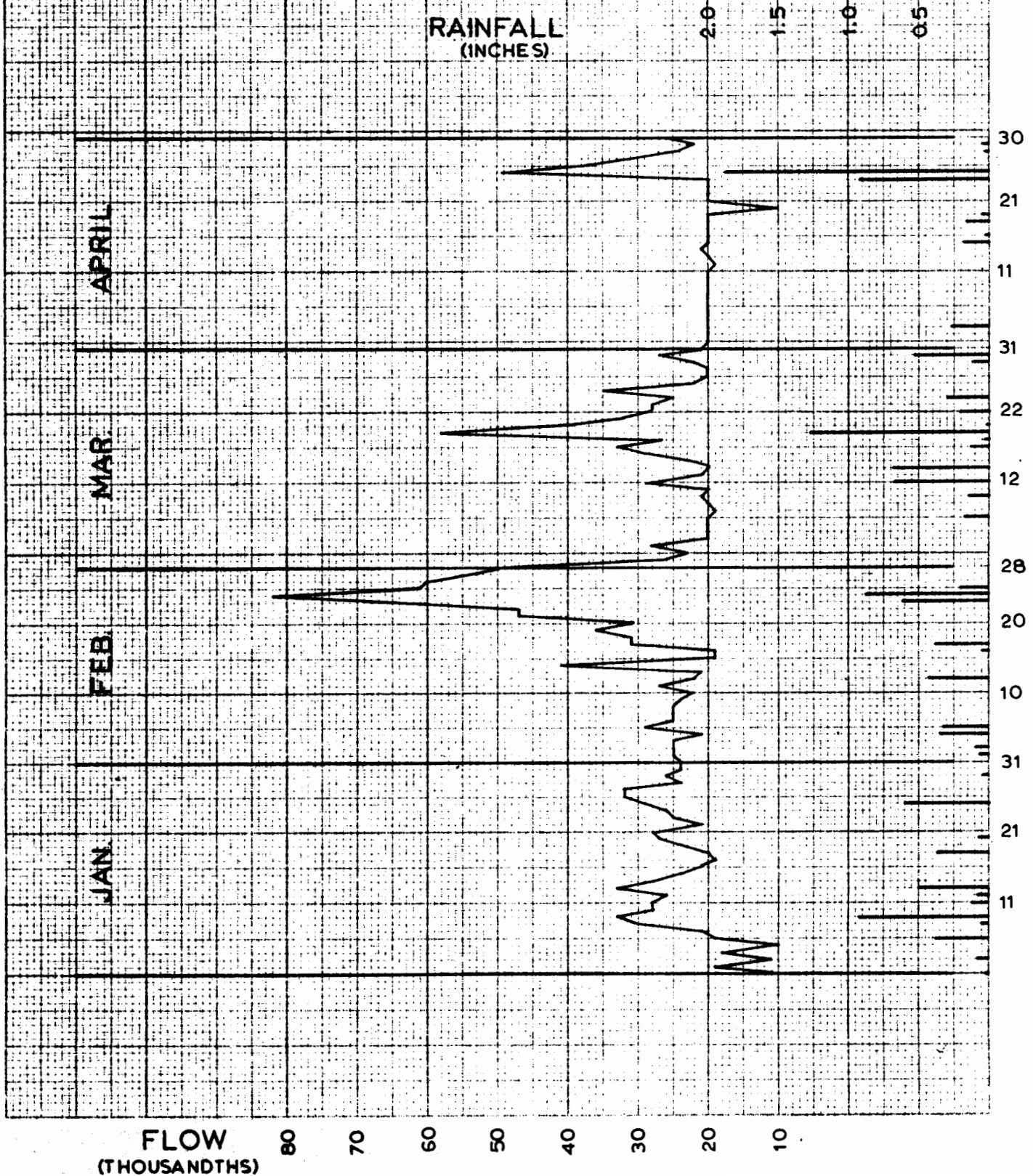
Source: Mr. Charles A. Bender
Official Recorder for U.S.D.A.

HAMILTON TOWNSHIP MUNICIPAL AUTHORITY
 FRANKLIN COUNTY, PENNSYLVANIA
 EXHIBIT IV
 PRECIPITATION & FLOW CURVES
 1974



HAMILTON TOWNSHIP MUNICIPAL AUTHORITY
FRANKLIN COUNTY, PENNSYLVANIA

EXHIBIT V
PRECIPITATION & FLOW
1975



HAMILTON TOWNSHIP MUNICIPAL AUTHORITY
FRANKLIN COUNTY, PENNSYLVANIA

EXHIBIT VI

TREATMENT COSTS
1973

2-6-73	1,400,000 Gallons @ 0.178 per 1000/Gal.	\$ 249.20
5-1-73	3,364,000 Gallons @ 0.216 per 1000/Gal.	726.62
8-7-73	3,128,000 Gallons @ 0.168 per 1000/Gal.	525.50
11-7-73	2,699,000 Gallons @ 0.223 per 1000/Gal.	<u>601.88</u>
TOTALS	10,591,000	\$2,103.20

1974

2-5-74	2,897,000 Gallons @ 0.192 per 1000/Gal.	\$ 556.22
5-7-74	3,680,000 Gallons @ 0.224 per 1000/Gal.	824.32
8-6-74	3,052,000 Gallons @ 0.197 per 1000/Gal.	601.24
11-6-74	1,896,000 Gallons @ 0.288 per 1000/Gal.	<u>546.05</u>
TOTALS	11,525,000	\$2,527.83

1975

2-4-75	1,602,000 Gallons @ 0.269 per 1000/Gal.	\$ 430.94
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PIPE GROUTING, INC.

guaranteed infiltration control

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Subsidiary of National Power Rodding Corp.

MAIN OFFICE
2235 W. HARRISON ST.
CHICAGO, ILL. 60612
(312) 666-7866

February 11, 1975

Mr. Bowman Stevens, P.E.
ARROWOOD INCORPORATED
P. O. Box 433
Chambersburg, PA 17201

Dear Mr. Stevens:

With regard to your recent phone call and my visit today, I would like to confirm your budget figure of \$12,000 regarding the cleaning, television inspection and grouting of those joints which need sealing is quite adequate.

It is understood that the project consists of 4,495 feet of 8-inch, 725 feet of 10-inch and 2,335 feet of 12-inch asbestos cement sewer pipe with a distance of 11 feet between joints. It is also understood that this sewer pipe has been underground approximately 3 years. When this project has become a reality, I would be very happy to issue a proposal regarding the work.

Should you have any further questions, please do not hesitate to contact me.

Sincerely,

VIDEO PIPE GROUTING, INC.

Harold Koseva
President

HK:pg

EXHIBIT VII



UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

WASHINGTON, D. C. 20250

April 19, 1977
Bureau of Land Management
Washington, D. C. 20250

Dear Mr. [Name]:

Re: [Name]
[Address]
[City, State, Zip]

Dear Mr. [Name]:

This letter is to inform you of the results of the [Name] project. The project was completed on [Date] and the results are as follows: [Name] has been found to be [Name] and [Name] has been found to be [Name].

It is understood that the project was completed on [Date] and the results are as follows: [Name] has been found to be [Name] and [Name] has been found to be [Name]. It is also noted that this project has been found to be [Name] and [Name] has been found to be [Name].

Should you have any further questions, please do not hesitate to contact me.

Sincerely,

[Name]

[Signature]
[Name]
[Title]

cc: [Name]

HAMILTON TOWNSHIP BOARD OF SUPERVISORS

R. R. 3

Chambersburg, Pennsylvania 17201

TO ALL SEWER USERS IN HAMILTON
TOWNSHIP

March 4, 1975

We are soliciting your cooperation to reduce the cost of treating excessive groundwater from our sewer system. Sewer rates will have to be increased if the inflow to the system is not eliminated.

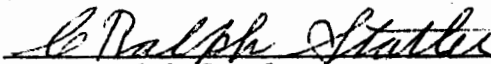
In complying with Federal regulations, we have had our Engineers prepare an inflow/infiltration analysis of the existing Hamilton Township sewers in the area of the Hoke Development. This analysis revealed that in 1974, approximately 10,500,000 gallons of wastewater emanated from this area. The sanitary sewage flow which should originate from this area is calculated to be approximately 5,775,000 gallons. This means that an excess flow of approximately 4,725,000 gallons is being recorded by our meter and we must pay for its treatment at the Chambersburg treatment plant.


According to the inflow/infiltration analysis, there may be two reasons for this excess flow. One is the illegal connection of sump pumps and drains in basements of homes and businesses in the area. Ordinance No. 37, Section 6(A) states "No person shall discharge or shall cause to be discharged any storm water, surface water, spring water, groundwater, roof runoff, subsurface drainage, building foundation drainage, or drainage from roof leader connections into any Sewer". In an effort to reduce the cost of treatment to the minimum, we are requesting the disconnection of any sump pumps, and/or any other prohibited drainage listed above from the sewer system. Further, an increase in your sewer rental rate can result if the excess flows continue.

We as the Township Supervisors, are concerned about this cost to the extent that within the next sixty (60) days we plan to have all residences and businesses inspected to ascertain whether there are any illegal connections. Section 8 of Ordinance No. 37 provides that "This Township shall have the right of access, at all reasonable times, to any part of an Improved Property served by the Sewer System as shall be required for purposes of inspection, observation, measurement, sampling and testing and for performance of other functions relating to service rendered by this Township through the Sewer System".

Your cooperation in this matter will be greatly appreciated.

HAMILTON TOWNSHIP BOARD OF SUPERVISORS


C. Ralph Statler


Merle E. Wingert

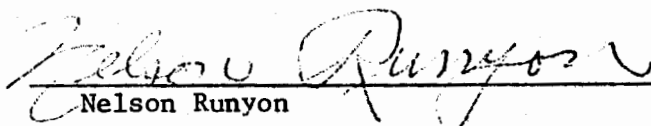
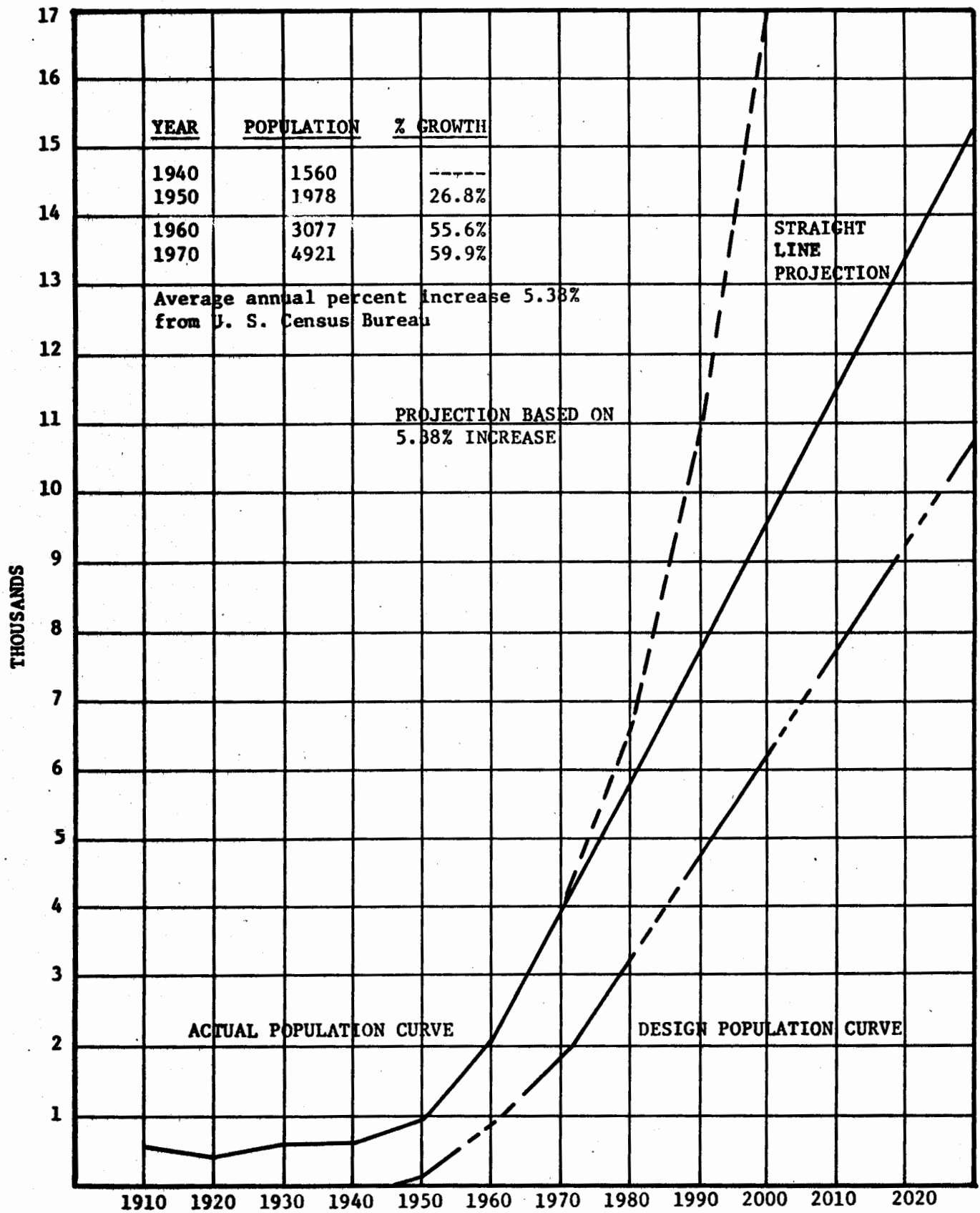

Nelson Runyon

EXHIBIT VIII

HAMILTON TOWNSHIP
FRANKLIN COUNTY, PENNSYLVANIA

POPULATION PROJECTION



HAMILTON TOWNSHIP BOARD OF SUPERVISORS

R. R. 7

Chambersburg, Pennsylvania 17201

December 7, 1971

The Hamilton Township Board of Supervisors met at the West Side Bank at 7:30 P. M. this evening for a regular business meeting. Carl Shields, Daniel W. Bricker and C. Ralph Statler were present. Solicitor Roy S. F. Angle, Engineer William Arrowood, Mr. Robert Long and Mr. Stephen Russell of Rhodes, Simon and Reader were also present.

A special meeting of the Municipal Authority was called for this evening, all members of the Authority were present.

Ordinances numbers 36, 37, 38 and 39 were advertised for adoption by the Supervisors at their meeting this evening. Ordinance no. 37 sets forth preliminary rates or charges and this created an issue objected to by many Township residents. There were more people present for the meeting than could be accommodated at the West Side Bank, so the meeting was adjourned and moved to the main Court Room of the Franklin County Court House in Chambersburg, Pa.

Miner Rockwell, Chairman of the Authority called the meeting to order and presided at the hearing, there were several hundred in attendance. The main item of objection was the \$16.00 per month charge. Those objecting were assured that when more data was obtained and before the first bills went out, a new rate schedule would be prepared and public hearings held.

Chairman Shields called the meeting of the Board of Supervisors to order at 11:45 P. M.

It is moved by Mr. Bricker and seconded by Mr. Statler, the minutes be held and read at the next meeting of the Board.

It is moved by Mr. Statler and seconded by Mr. Bricker that Ordinance no. 36 be adopted as advertised.

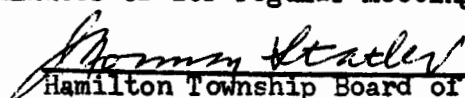
It is moved by Mr. Bricker and seconded by Mr. Statler that Ordinance no. 37 be adopted as advertised.

It is moved by Mr. Statler and seconded by Mr. Bricker that Ordinance no. 38 be Adopted as advertised.

It is moved by Mr. Bricker and seconded by Mr. Statler that Ordinance no. 39 be adopted as advertised.

I, J. Norman Statler, Secretary of Hamilton Township Board of Supervisors, Franklin County, Pennsylvania hereby certifies that the above is a true and correct copy of a portion of the minutes of its regular meeting held December 7, 1971.

February 25, 1975.

 Secretary
Hamilton Township Board of Supervisors.

SPECIAL MEETING
HAMILTON TOWNSHIP MUNICIPAL AUTHORITY

October 5, 1972

The Hamilton Township Municipal Authority held a Special Meeting at the Hamilton Heights Elementary School. This was a joint meeting with the Township Board of Supervisors. Present:

Miner Rockwell	Authority Member
Walter Miller	Authority Member
Norman Eyer	Authority Member
Garnet B. Dice	Authority Member
Harry B. Stouffer, Sr.	Authority Member
C. Ralph Statler	Township Supervisor
Nelson Runyon	Township Supervisor
Roy S. F. Angle	Solicitor
William Arrowood	Engineer


Also present were seventy three citizens of the Township.

This was a public hearing on Phase I and Phase II projects and Ordinances No. 42 and 43. The meeting was called to order at 7:30 p.m. and turned over to our Engineer to explain the Phase I and Phase II projects. Those present discussed the rates established for the system. After an explanation that the rates were necessary to repay the loan and to pay operating expenses, the citizens accepted the rate structure.

Upon motion of Eyer, seconded by Dice, the Authority entered into a Maintenance Service Agreement with the Borough of Chambersburg. Motion passed.

Upon motion of Eyer, seconded by Stouffer, the service connection fees are to be deposited in the Authority's construction account. Motion passed.

There being no other business, on motion of Miller, seconded by Dice, the meeting was adjourned.


Harry B. Stouffer, Sr.,
Secretary

*The following article appeared in the Public Opinion on December 8, 1971
This was typed from a microfilm copy which was not reproducible.*

HAMILTON TWP. SEWER CONSTRUCTION OKAYED

The Hamilton Township Board of Supervisors unanimously passed an ordinance Tuesday night authorizing the construction of a sanitary sewage system for the Hoke Development just west of Chambersburg.

Supervisor Ralph Statler said this morning the vote came after three hours of questions from the approximately 200 persons who attended the meeting. He said they filled the main courtroom and most were opposed to the proposed \$16 monthly charge for the service.

Paul K. Deardorff Construction Co. submitted the low bid of \$153,277.65 for the job and was awarded the contract November 2. A spokesman for the firm said this morning construction should begin shortly after January 1 and the project would take about four months to complete.

Statler said there would be no front foot assessment. Each property owner will have to pay \$250 to connect with the system. Under state law, each property owner must connect if the sewer line comes within 250 feet of his property.

The new sanitary sewage system would affect approximately 53 private dwellings and three apartment structures. All waste water collected by the system would be transmitted to the Chambersburg waste water treatment plant.

According to the supervisor, the entire township will have sanitary sewage "eventually, or all building will stop in Hamilton Township." He stressed the state is requiring such systems for the entire area.

Statler said those expressing opposition to the \$16 monthly rate failed to realize that figure is a "high" estimate which could be reduced. He stressed the supervisors chose the top price hoping for a reduction rather than selecting a lower estimate with the possibility of increasing it.

One of the main points of misunderstanding, he said, was an alleged \$96 charge for pumping water into the system from private swimming pools. No water from private pools, he stressed, would be permitted in the system.

Phase Two of the Township sewage system is now in the planning stages and is expected to cost about \$2 million. That will involve about 138,400 feet of sewage line, seven pumping stations, and a small waste water treatment facility to serve the Cashtown area.

The system financing is expected to come from state and federal grants, tapping fees and the monthly rental charges.

*The following article appeared in the Public Opinion on November 3, 1971.
This was typed from a microfilm copy which was not reproducible.*

HAMILTON TOWNSHIP AWARDS SEWAGE SYSTEM CONTRACT

Hamilton Township Municipal Authority awarded a contract Tuesday to Paul K. Deardorff & Sons, Inc. to construct the first phase of the township sewage system. Contract price is \$153,277.65

The township thus became the first Second Class Township in Franklin County to award a construction bid for sewers, according to Miner S. Rockwell, chairman of the municipal authority.

The history of this project began in January, 1965 with the enactment of Act 537 by the Commonwealth of Pennsylvania. Among other things this Act called for preparation of an official sewerage plan by each municipality within the Commonwealth and the submission of an implementation schedule for the construction facilities called for by the plans.

January 27, 1970, the local engineering firm of Arrowood, Inc. submitted the Hamilton Township Official Sewage Plan to the Board of Supervisors. August 20, 1970 the Hamilton Township Planning Commission and the Board of Supervisors approved the plan and submitted it to the Commonwealth for review. Approval was issued October 27, 1970. The Hamilton Township Supervisors July 20, 1971 formed the Municipal Authority which held its first meeting August 3. At a later meeting the Township turned over to the Authority all its work previously performed including all rights-of-way, bids for construction and commitments for Federal and State Grants.

Early pressures on individual property owners within the Hoke Development located just west of Chambersburg caused the Supervisors to indicate to the Department of Environmental Resources that the Township would move ahead with as much speed as possible to sewer this area of the Township. This commitment resulted in the design of a portion of 12-inch trunk line and an eight inch collection system to sewer approximately 53 houses.

An application for a Federal Grant and for Grant funds from Pennsylvania Commerce Department (harness Racing Funds) were made for this first phase of the overall system. Grants actually committed as a result of these two applications amount to approximately 40 per cent of the total project cost. Construction is expected to begin in approximately two weeks.

The Hamilton Township Municipal Authority took action Tuesday authorizing its engineer to proceed with the final design of Phase Two which is expected to cost two million dollars. Phase Two will consist of approximately 93,350 lineal feet of collection lines, 27,050 lineal feet of interceptor lines, seven pumping stations, 18,000 lineal feet of force main and one small waste water treatment plant to serve the Cashtown area.

All of the sewage collected by these lines, other than the Cashtown area, would be transmitted to the Borough of Chambersburg for treatment in its existing plant. In addition to serving the built-up areas of Hamilton Township a small portion of Letterkenny Township (Flohr Development) would be served by the Hamilton Township System. An agreement between Letterkenny and Hamilton Townships must yet be worked out to their mutual satisfaction. The proposed method of financing the final project cost would be through three revenue sources - the first source would be Federal and State Grants, the second source would be tapping fees for each customer attached to the system. The tapping fee is expected to be \$250. The third source would be through monthly rentals which is expected to be approximately \$192 per year. There will be no front foot assessment charged.

Members of the authority in addition to Rockwell are Walter Miller, vice chairman; Harry Stauffer Sr., secretary; Garnet Dice, assistant secretary, and Norman Eyer, treasurer.

HAMILTON TOWNSHIP BOARD OF SUPERVISORS

R. R. X 3,

Chambersburg, Pennsylvania 17201

Chambersburg, Pa.

October 5, 1972

The Board of Supervisors of Hamilton Township held a special business meeting in conjunction with the Hamilton Township Municipal Authority. The meeting was held in the Hamilton Heights School Building. Present:

C. Ralph Statler	Township Supervisor
Nelson Runyon	Township Supervisor
Miner Rockwell	Authority Member
Harry B. Stouffer, Sr.	Authority Member
Walter Miller	Authority Member
Norman Eyer	Authority Member
Garnet B. Dice	Authority Member

Present were the Solicitor, Roy S. F. Angle and the Engineer, Bill Arrowood, seventy three citizens of the Township were also present.

The purpose of the meeting was to hold a public hearing on Ordinance No. 42 which amends Ordinance No. 37, and establishes a new sewer rental and charges. Ordinance No. 43, first supplemental agreement of lease was up for discussion at the same time. The Phase I and II sewer projects were on the agenda for explanation and discussion.

The meeting was opened at 7:30 p.m. and the Engineer was requested to explain the Phase I and II projects and the sewer rentals being established by Ordinance No. 42. Mr. Arrowood displayed maps of the "as-built" Phase I and the proposed Phase II systems.

Those present expressed a need for the sewer system. The lengthy discussion involved the rates being charged.

Arrowood's explanation of the necessity of the rentals to repay the loan and to pay for operating costs seemed to satisfy those present.

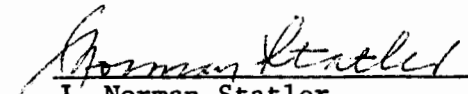
It was moved by Mr. Runyon and seconded by Mr. Statler that Ordinance No. 42 be adopted as advertised. Motion passed.

It was moved by Mr. Statler and seconded by Mr. Runyon that Ordinance No. 43 be adopted as advertised. Motion passed.

There being no other business, on motion of Mr. Runyon, seconded by Mr. Statler, the meeting was adjourned.

SIGNED Clarence C. Allison,
Secretary

June 24, 1975 I, J. Norman Statler, Secretary of Hamilton Township Board of Supervisors hereby certify that the above is a true and correct copy of the minutes of the meeting held October 5, 1972.


J. Norman Statler,
Secretary

*The following article appeared in the Public Opinion on October 3, 1972
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**HAMILTON TWP. SLATES MEETING
TO OUTLINE CUTS IN SEWAGE RATES**

The Hamilton Township Municipal Authority and Board of Supervisors have scheduled a public meeting at 7:30 p.m. Thursday in the Hamilton Heights Elementary School to present the details of a new sewage rate Ordinance which in effect reduces by 25 percent the sewage rates for residential customers served by the newly-constructed sewer system. Reductions for commercial and industrial customers amount to a much higher percentage when compared to the rates now in effect by existing ordinance.

Pressured by the State Department of Environmental Resources, Hamilton Township was forced to construct the first phase of a sewerage system in advance of a detailed house count and rate study. Consequently, in order to finance the first phase, it was forced to adopt a "paper" ordinance that provided for rates not consistent with the true requirements of the sewerage program. At an earlier public meeting held in the Court House citizens were promised that before any charges were levied on any customer, a detailed rate study would be made and a new rate ordinance would be proposed based upon that Study.

The Township's Engineer, Arrowood, Incorporated, has completed the detailed rate study and has recommended to the Township that it adopt a rate ordinance with two classes of service, residential and commercial-industrial.

Under the Arrowood proposal, the residential class of service would be on a flat-rate basis while the commercial-industrial would be metered. The proposed new ordinance would call for each equivalent domestic unit to pay \$12 per month or \$144 per year instead of the existing \$16 per month and \$192 per year rates.

In the commercial-industrial class of service the new ordinance proposes \$12 per month minimum charge for metered service which allows for 3,000 gallons of discharge. Discharge above 3,000 gallons is on a sliding scale rate based upon the total actual consumption.

According to a representative of the Arrowood Firm, "the existing ordinance was a necessary evil to enable financing of the first phase of this system. In order to assure adequate financing, high rates were established on the basis of crude surveys, however, it was recognized by all officials that a more detailed investigation was necessary before the adoption of an ordinance establishing rates that would actually be billed."

The Arrowood Firm added that "an additional rate reduction might be possible if the proposed revisions to Federal P.L. 660 become effective prior to the construction of Phase II of the sewer project. P.L. 660 provides a program whereby Federal Grants are made for funding certain portions of such systems. The proposed revisions provide for an increased percentage of grant funds and also include the cost of collection lines in the calculation of eligible costs used to determine the total amount of the grant. If these revisions are approved there will be a substantial savings to not only the citizens of Hamilton Township but, to all other citizens involved in the construction of a public sewerage system."